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ABSTRACT

A study examined whether the addition of electronic print to the audiovisual medium of television would significantly improve the information recall of children viewing a television program. Subjects in the control group viewed a videotaped version of a fictional narrative, while students in the experimental group watched the same tape, with the addition of a printed narrative displayed on the monitor. Both groups completed a written recall test immediately following the viewing. Results showed that the addition of electronic print to the video presentation did not significantly increase the information recall of the children viewing it. The findings seem to contradict recent research in the area of modality combination showing that if two modalities are viewing it. Past research seems to indicate that any dual modality combination of pictures, sound and print communicates more effectively than the modalities singularly. But based on this study, all three together are not better than a dual combination. (Copies of the text of the electronic print narration and of the recall test used in the study are appended.) (FL)

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Pictures, Spoken Word and Electronic Print: A Combination of Presentation Modes In Educational Television

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Running head: Electronic Print

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PICTURES, SPOKEN WORD AND ELECTRONIC PRINT: A COMBINATION OF PRESENTATION MODES IN EDUCATIONAL TELEVISION

Introduction

Television is a much researched phenomenon in the world of communication today. But television producers and designers are virtually at a loss for information regarding which production techniques are better suited for instruction. Research concerning television has mainly dealt with comparing television to some other medium, rather than considering the variables within television production itself (Nugent, Tipton and Brooks, 1980). Almost any television engineer would agree that television is made up of two main media (modes, modalities or channels, whichever term one prefers), audio and video. There is at least one other variable that comes into play, however, and that is electronic print -- words actually flashed on the television screen by means of an electronic character generator (i.e., subtitles).

Peters (1980) explained that electronic print is so available today that television viewers are in a very real sense "television readers". Through research such as that done by Hannafin and Carey (1981), much support has been gained for the idea that a combination of visually and auditorily presented information is recalled (learned) better than information presented either visually or auditorily alone. Since television is an audio/visual medium, it should then prove to be an effective medium for instruction. Peeck (1974) supports the notion that pictures enhance the recall of written material. What then if all three channels (pictures, spoken word and print) are combined? Would adding electronic print to educational television

programs improve the information recall of those viewing the program?

Nature of the Problem

The people of this country are constantly striving for better ways in which to educate their young. Educators are watched carefully and often criticized. When it appears that there is a major problem with the nation's youth, two institutions are quickly blamed. One is education and the other is television. Therefore, one treads on thin ice when he dabbles in the area of educational television. With the increasingly complex world we live in showing no signs of deceleration, educators often hear the cry, "Get back to basics!". But while children spend more time in front of the television than in school learning the basics, can educators really afford to ignore television? Certainly there are television programs which are in fact educational, and do help children learn those basic subjects. But they are not without their array of critics. Given the availability of television, the nature of its presentation, and the mass exposure to it, it seems logical that television should be put to good use as an instructional medium.

What then is the problem? According to Nugent, Tipton and Brooks (1980), a major portion of the problem is that many television designers and producers do not know what specific production techniques lend themselves to instruction. Television artists and technicians have an astounding number of special effects, picturization techniques, lighting variations, format variations and other techniques at their fingertips. They may well know which ones are more artistic, more aesthetically pleasing, more intense, and they certainly know which ones are easier to use or less expensive. But how are these people to know which techniques are more suitable for education until

researchers address the issue?

Another part of the problem is the willingness of educators not only to accept television, but to find innovative ways of using it. F. Peters (1980) explained that even though television is growing rapidly as a reading source, most reading professionals have never taken it seriously.

The preceding paragraphs were concerned with the nature of the problem in general. The specific direction of this study focuses on one production technique -- electronic print, and its addition to the television program. While positive results are hypothesized for such a triple modality combination, the viewer of such an audio/visual print presentation might experience a sort of "information overload". Welch and Watt (1980) found no evidence that visual complexity increases attention, in fact it may produce a slight decrease. Their study suggested a negative relationship between visual complexity and verbal learning.

In order to understand the basis for and direction of this experiment, a brief review of pertinent literature is in order.

Review of Literature

The greatest amount of research concerning presentation modalities has been conducted by psychologists and educators. Also, most of it concerns school children since it is they who are the target of most educational programs.

Rowher and Harris (1975) found "the degree of success with which information is conveyed to children varies with the background of the child, the media of presentation, the type of information to be acquired and the performance used to index acquistion" (p. 656). Is one presentation mode

better than others? Research by Hayes and Birnbaum (1980) suggested that "young children attend more closely to visual than auditory features while watching popular television shows" (p. 415). Dornbush and Basow (1970) found that in their study of children, auditory recall performance was better than visual recall. However, Erdelyi and Kleinbard (1978) generated evidence that recall for pictures actually increases over days while recall for words does not. In a study by Browne (1978) with adults, print was supported as a better teacher than film. The film contained both pictures and sound. Wager (1980), however, in his research concerning graduate students' recall, tested the communicative effectiveness of film, written text and live demonstration. He found "type of medium used to present stimulus made no significant difference" (p. 23). Research to date has not been very conclusive as to which modality: pictures, sound, or print, is best for communicating. Results in comparative and contrasting experiments have varied a great deal.

Instead of asking which is better, some researchers have concerned themselves with the idea that certain presentation modes might be more suitable for conveying certain types of information. Merringoff (1980) supported this concept. Hannafin and Carey (1981) found that among their subjects (fourth graders), "verbal and picture presentations are equally effective in communicating abstract prose to learners . . . picture presentations are more effective in communicating concrete information to learners" (p. 11). When Welch and Watt (1980) studied the effects of visual complexity on young children, they found evidence that increases in visual attention lead to increased learning of visually presented messages, but not of strictly verbal information.

On the other hand there is the notion that "certain instructional methods and materials will be most effective for some students whereas different methods and materials will be most effective for others" (Rowher and Levin, 1971, p. 140). Barsch (1971) posited that there are four major channels of information processing: visual, auditory, tactile and kinesthetic, and that different people learn better through different hierarchial arrangements of these modes.

> The designation AKTV indicates that the learner is most effective in dealing with information delivered at an auditory level [A] and least effective handling information on the visual [V] level. It is fundamental to the concept that all modes are active in all learners but some are more effective than others based on experiential emphasis (p. 214).

With support for certain presentation modes being better suited for conveying certain types of information, and further support for certain channels being more effective for certain learners, then would one be increasing his/her chances of effective communication when combining presentation modes? Willows (1978) found that text related illustrations improved accuracy of decoding, while unrelated illustrations hampered it. Peeck (1974) found that subjects who read illustrated passages recalled more textual as well as illustrated information than did the subjects who read non-illustrated passages. Levin and Berry (1980) found that pictures enchanced recall of aurally presented information as well. Many recent studies (Haring and Fry, 1979; Lee, 1980; Levin, Bender and Pressley, 1979; . . .) support combinations of two modalities as improving information recall. In

1978 Hyatt, Riley and Sederstrom studied television weather reports and found T.V. viewers remembered more about weather forecasts than did radio listeners or newspaper readers. The television weathercasts utilized pictures, sound, and electronic print. It is generally supported that two modalities communicate more effectively than one. But there is a demonstrated lack of research concerning all three combined (Nugent, G., 1982).

Hypothesis

The hypothesis of this study is that the addition of electronic print to the audio/visual medium of television will significantly improve the information recall of children viewing the television program. The null hypothesis is that electronic print will not significantly increase viewers' recall.

Justification

As discussed previously, there is very little data concerning television production techniques and their respective instructional or communicative effectiveness. Electronic print is just one technique available to television technicians. But, if it should be supported as enhancing viewer learning, electronic print could be a great step toward more fruitful use of television. News programs, instructional programs, even documentaries and dramatic presentations can adopt the "print on screen" format. Peters (1980) explains that there is already an abundance of print included in any broadcast day, and that since electronic print is so widely used, educators should take a closer look at it as a form of reading. Much electronic print is found in a form of "block language" very similar to headlines. Advertisers and producers seem to believe that this helps reinforce

their messages, or they would not use it. If block language truly can enhance communication, then entire phrases, ideas and sentences printed on the screen may have very beneficial effects for the readers.

Methodology

The experimental design used in this study of presentational modes is referred to as the post-test only control group design (Campbell and Stanley, 1963). Randomization was considered adequate to assure lack of bias between groups, and a pretest was unnecessary. Details of the methods utilized follow.

Subjects

Subjects for the study were 42 second-semester fifth graders in Portales, New Mexico. Although requested, the experimenter was not permitted to choose students randomly from all the fifth graders attending a local elementary school. The experiment was conducted on the prinicpal's assurance that students were assigned to homeroom classes on a random basis. Fifth graders were chosen because they are at an age where their listening skills and reading skills are relatively equal.

> Students listening comprehension is generally superior to their reading comprehension in the elementary school years . . . Listening and reading become more equal in both word and recognition rate and in word-per-minute rate during the late elementary school years (Burns and Roe, 1980, p.20).

Variables

Independent Variable

The independent variable or treatment added to the experimental group

was electronic print. The print was created with a television production device known as a character generator. The print was clear, bold, large enough to be easily read, located at the bottom of the screen during the videotape presentation, and printed simultaneously with the duplicate oral messages. The speed of the oral narration and the print was approximately 150 words per minute.

Dependent Variable

The dependent variable consisted of the scores on a simple test for recall. The test consisted of 26 questions (see Appendix A). The first two questions assessed whether the child was in any way familiar with the experimental story previous to the videotape presentation. They were answered either "yes" or "no". Questions three through 26 were open-ended, short answer "who, what, where, when, why" type questions about information contained in the videotape presentation, as recommended by Levin and Lesgold (1978). An example is; "What type of animals did Annie's family herd?" The correct answer is "sheep". The answers were judged either correct or incorrect, depending on whether or not the subjects remembered the information contained in the videotape and requested in the question. To avoid indecision and ambiguity in coding, only concrete information was tested for, not abstract. In coding, therefore, only those terms specifically used in the text were deemed correct. Vague or borderline answers were marked incorrect. For consistency, one person coded answers for both groups.

Procedure

Cooperation was sought and acquired from the Superintendent of Schools and the elementary school principal. A parental permission form was created

and submitted, but deemed unnecessary by the school administration.

One homeroom class containing 22 students served as the control group. The control group viewed a videotape of a fictional narrative story. A fictional narrative was preferred over factual content so the confounding effect of previous subject exposure to this information was minimized. Annie and the Old One by Miska Miles (1971) was the story used. The text is approximately at the fifth grade reading level according to the Fry Readability Graph (Fry, 1977). The viewing took place in a classroom. Before the subjects entered the room, other neutral students were asked if they could see and hear the monitor well from all parts of the room. All answers were affirmative. When the subjects entered the room they were told they would view a videotape of a story. They were instructed to be very quiet, pay close attention, and try to remember everything they could from the story, because they'd be asked a few questions about it afterward. The experimenter made sure everyone could see and hear the television monitor well. The tape was approximately fourteen minutes long and contained informationally redundant sound and pictures (no print). Redundancy is a very important condition in studies of modality combination (Levin and Lesgold, 1978). After the presentation, the subjects silently returned to their desks where a pencil and paper were waiting. The experimenter then orally administered the recall test. Twenty-five seconds were allowed for each answer. The subjects answered the test questions in written form. Siegel and Allik (1972), found that modality of recall cue had no effect on recall of visual or auditory stimuli. The choice of oral questions and written answers was, therefore, on a convenience basis. After the test, the children were thanked for their coopera-

tion and told that the test results had nothing to do with their school grades.

The subjects in the experimental group viewed a copy of the same videotape. The difference was that the oral narration was accompanied by duplicate print narration so the subjects could read along with the story. The electronic print was completely redundant with the oral message and printed on the monitor simultaneously. The experimental group presentation took place one day after the control group presentation. The viewing and test conditions were the same as with the control group in all other aspects.

In order to control for certain possible confounding subject characteristics, the teacher of each class was questioned regarding hearing problems, sight problems and language barriers which might interfere with the subjects' performance on the recall test.

Statistics

The descriptive statistics which were necessary for analysis were calculated. They were utilized in the administration of a t-test for differences between the groups' mean scores. This test was, according to Campbell and Stanley (1963), optimal for this experimental design, as well as the simplest choice. An alpha level, or level of significance of .05 was the basis for rejection or acceptance of the hypothesis. The .05 alpha level was designated because it has "been defined by convention to be a reasonably rare, chance occurence" (Loether and McTavish, 1974, p. 143-144). Since this was a unique study, a more stringent level of significance did not seem suitable. The Statistical Package for the Social Sciences computer system was utilized for analysis in this study, (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975).

Results

Five subjects in the control group answered yes to one or both of questions 1 and 2 (see Appendix A). This indicated they were previously familiar with the narrative Annie and the Old One so no further coding or analysis was performed on these tests and they were discarded. Tests from two of the experimental group subjects were discarded for the same reason.

Upon discussion with homeroom teachers, it was determined that two tests from the control group should be discarded because the subjects were primarily Spanish speaking, and had trouble understanding and reading English on a fifth grade level. These tests were identified and discarded before the coding process.

After scoring the remaining recall tests, the following statistics were generated: The control group had a mean score of 16.4 with a standard deviation of 3.7. The experimental group's mean score was 17.8 with a standard deviation of 3.9.

A t-test for differences between the means was administered, utilizing a .05 level of significance. This test was administered by computer, utilizing the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975, pp. 271-272).

Results of the t-test indicated that though the experimental group did slightly better on the recall test, the difference was not significant: $t(14)=1.11$, $p>.05$.

Conclusion

The hypothesis was not supported. The results of this experiment indicate the addition of electronic print to the audio/visual medium of television

did not significantly increase the information recall of children viewing the television program.

Discussion

Several researchers have recently generated support for combined presentation modes as facilitating recall more effectively than single modality presentation. "The presentation of bisensory information yields better recall performance than information presented in a unisensory modality" (Smith, Everett and Westendorf, 1978, p. 545). The Smith, et. al. study compared a print/audio combination to these two modalities singularly. Other studies such as that by Hannafin and Carey (1981) compare picture presentations and audio presentations with a combination of the two and generate similar results. Still another variation is supported when pictures and print are combined (Peeck, 1974). Again the combination of modes of presentation results in better information recall than either mode alone. Any dual combination of the three presentation modes: pictures, sound, and print seems to enhance recall.

This study was based on the idea that if two modalities are better than one, then three might be better than two. It seemed the next logical step to combine all three modalities and compare that combination's effect on recall to that of a double combination.

The results of this investigation appear to contradict the bulk of recent research in the area of modality combination. Perhaps a triple combination is simply too much for a subject to attend to. Welch and Watt (1980) found no evidence that visual complexity in television increases attention, and that it might, in fact, produce a slight decrease. It is quite feasible that

the children paid very little attention to the captions while watching and listening to the program. It is certainly not a type of television viewing they are accustomed to; that is, having completely text-redundant print available on the screen.

One consideration might be that in normal reading, a person can choose his or her own speed, and can reread any part of the text at will. With electronic print, speed is controlled not by the reader, but by the person who recorded the program. Once a sentence leaves the screen, it is gone. There is no chance to reread.

Although these results do not fit well with studies such as Willows' in 1978 and Peeck's in 1974, there were two recent experiments which yielded similar findings. It was not a major emphasis of their study, but Rowher and Harris (1975) compared children's recall of information presented in a triple modality combination with recall of information presented in dual combinations. "With only minor exceptions, performance in the three-media condition (oral plus pictures plus print) did not differ significantly in either population from performance in the dual media conditions" (p. 656). That experiment did not involve television, but Nugent's (1982) did. Results from both of these studies conincide with those of the present effort, in lack of support for the addition of print to audio/visual media.

Since in this experiment, the hypothesis was not supported, the implications for the television industry are quite simple. If this study is a valid indication and is shown to be so through replication, then the television industry should not go to the extra trouble and extra expense of redundantly captioning educational and instructional programs. Of course,

the captioning already carried out for the hearing impaired and foreign language subtitling must continue. Benefits from such programs are obvious.

Limitations

In retrospect of their endeavors, researchers are generally able to identify limitations of and problems with their research designs and procedures. This study is no exception. An examination of difficulties with the study may provide insight for improving future experimentation in the area.

A major prerequisite for the post-test only design is randomization (Campbell and Stanley, 1963). Permission was not granted by the elementary school involved to select 50 subjects from all fifth graders enrolled, utilizing a table of random numbers. However, the principal gave assurance that students were assigned to homeroom classes on a strictly random basis. The term random is unfortunately subject to interpretation, and it may be that the classes were not representative. Of course, even if the sample was random and representative, it was only representative of the population of fifth graders at that particular elementary school.

The problem of screening a total of nine tests and excluding them from the coding process reduces the sample size and could well have also affected the representativeness of the sample. Lowry (1979) posits that Communication researchers in general have a tendency to fail at demonstrating population validity. If results are to be generalizable to the population of interest, then population validity is of paramount importance. Definite randomization procedures, and screening of subjects during subject selection instead of

after the viewing would most likely have improved the generalizability of this research.

Since the recall test used was an original and not standardized, questions about its validity can be raised. In this experiment the test for recall was designed only to measure concrete information. It may be that a test for abstract information, or one which requires more detailed answers would improve the design. No pretest was used here because the design does not really call for one. But, even with a random sample -- a standard test for reading ability could have been a good pretest for assuring population validity.

Even though the narrative was measured to be on the fifth grade reading level, perhaps the text was too simple or too difficult to produce significant results. A triple combination might be more beneficial with more difficult information, forcing the viewers to utilize all three modes in understanding the information.

This study was also limited in the sense that more experiments could have been performed in the same procedure in order to check for consistency of results. The same purpose can be served, however, through future replication.

Future Research Directions

Replication of this study would be the first direction recommended for future research. It should be revealed whether electronic print is generally ineffective in increasing viewer recall, or this study constitutes an isolated occurrence. Modifications of this design can be plentiful. Fifth graders were subjects here, but information is needed concerning all age groups in

regard to modality combination. Several experiments per study would be a fruitful replication technique. The textual material utilized in future studies should be varied in terms of subject matter and difficulty levels. Although not significantly, the electronic print group did recall more information. Perhaps with larger samples the differences might approach significance.

Another area for emphasis is that of cognitive learning styles. As discussed earlier, Barsch (1971) posits that people process information through four major modes: auditory (A), visual (V), kinesthetic (K), and tactual (T). He explains that different people process information better through different modes. There are various mode hierarchies among humans.

> The mode which serves the learner most effectively in his interactions with a world of data is accorded the prime position. The mode which is considered to be least effective is placed in the final position. . . . The potential for success in learning auditory material is higher for the AKTV person than for the KTVA person (pp. 213-214).

Barsch recognizes the gustatory and olfactory modes, but does not include them in the hierarchy since they routinely occupy the lowest positions. The point is, future research in the area of modality combination should examine the effects of such combinations on the information recall of people with differing processing mode hierarchies (or cognitive learning styles). Perhaps people with the visual mode at the top of their hierarchy would benefit from the addition of electronic print while others would not.

In another vein, some further research should concern different types of information. This study only dealt with concrete information. In future studies both concrete and abstract information recall can be tested for. Differing results may appear, and comparisons could prove quite enlightening. For example; Hannafin and Carey (1981) generated findings that suggest "verbal and picture presentations are equally effective in communicating abstract prose to learners. . . picture presentations are more effective in communicating concrete information to learners" (p. 11).

Tests for sex differences would definitely be in order. For example; a pertinent research question to explore is whether women would benefit more or less from the triple modality presentation than men, if they benefit at all.

Researchers in this area should also explore race and socioeconimic background. Rowher and Harris found several marked differences between such groups in their study of media effects on prose learning. One example was that "the beneficial effect of oral presentation [over pictures] was apparent in the high SES [socioeconomic status] white samples, but not among the low SES black children" (1975, p. 655).

Most televised electronic print appears in a form of "block language" similar to newspaper headlines (Peters, 1980). In the present experiment, the print was completely redundant with the audio material. Our society is more familiar with "block language" on television. A future study might electronically print only key words or phrases from the text onto the screen and test for recall improvement.

These are but a few suggestions for future research concerning the triple

modality presentation. Many other directions will surely surface. The main emphasis of this section is that research along these lines is not only justified, but very necessary. Although in a very different way, Lee (1980) documents support for combining print with television. He cites a CBS reading program in which printed scripts of television shows were used in conjunction with viewing the broadcasts. "In addition to benefiting reading skills, the confluence of opportunities provided by the reading program can provide a fertile context for inductive learning" (p. 180). The need for research concerning television production techniques was discussed previously and is reemphasized here. As Nugent, Tipton and Brooks (1980) pointed out, producers and directors are virtually at a loss for information regarding what techniques are better suited for instruction.

Whatever directions research in educational television takes, it is important that it be increased. J. D. Tierney (1980) traced the growth of instructional television from the 1950's and found that from the beginning, it resulted in increased vocabulary skills, listening comprehension, reading and writing. Since television has already demonstrated such positive benefits, how much greater the potential benefits must be. It is through concerted and expansive research efforts that educators will discover how best to utilize this omnipresent instructional entity called television.

It can be concluded from this study that the triple combination of pictures, spoken word and electronic print in television does not significantly enhance children's information recall as compared to pictures and sound without print. There is certainly an immense need for further research before any firm, broad conclusions or recommendations about triple modality effectiveness can

be made. Past research seems to indicate that any dual modality combination of pictures, sound and print communicates more effectively than the modalities singularly. But based on this study, all three together are not better than a dual combination. Television without electronic print is already a dual modality combination.

The indications of this investigation, in conjunction with previous research findings, tend to coincide with Rowher and Harris' concluding statement "when choices must be made among alternative ways of conveying information, it may be warranted to select a combination of oral and pictorial media" (1975, p. 657). The inclusion of the third modality component appears to be of no significant benefit to learners.

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Appendix A: Test for Recall

1. Q. Have you ever seen this program before?

2. Q. Have you ever heard or read Annie and the Old One before?

3. Q. What Indian tribe did Annie belong to?

   A. Navaho

4. Q. What was Annie's house called?

   A. A hogan

5. Q. What type of animals did Annie's family herd?

   A. Sheep

6. Q. Who cleaned and combed the wool?

   A. Annie

7. Q. Where did Annie's mother sell the rugs?

   A. At the trading post

8. Q. How was the old one related to Annie?

   A. She was her grandmother.

9. Q. What kind of food did Annie and the old one prepare?

   A. Fried bread or bread

10. Q. What did Annie and the old one do when the bread burnt a bit black?

    A. They laughed and/or said it was good.

11. Q. What would happen when the rug was taken from the loom?

    A. The old one would go to mother earth. (die)

12. Q. What did the old one give to Annie?

    A. Her weaving stick.

13. Q. What things did Annie's family need from the trading post?

A. Deerhide for boots, silver for fodder

14. Q. Why did Annie plan to be bad at school?

A. So her teacher would call her mother in - so her mother would not be able to weave for one day

15. Q. Who lead the excercises at Annie's school?

A. The teacher.

16. Q. What excercise did they start with?

A. Jogging

17. Q. Why did Annie let the sheep out of the pen?

A. So her mother and father would have to hunt for them all day - so her mother would not weave that day

18. Q. Who found the sheep?

A. The old one

19. Q. Which two people went to herd the sheep back to the pen?

A. Annie and her father

20. Q. Where were the sheep when they were found?

A. Near the mesa - grazing

21. Q. What did Annie hear at night when she could not sleep?

A. The wind

22. Q. What was the wind whistling through at night?

A. The loom

23. Q. What did Annie want to do when the old one caught her unraveling the rug?

A. Throw her arms around her grandmother, tell her why she was bad

24. Q. Where did Annie and the old one walk late one night?

A. Out into the desert

25. Q. What did Annie and the old one watch when they got there?

A. The sun rise

26. Q. What did Annie do when she and the old one came back home from the desert?

A. She started to weave

Appendix B: Text of Annie and the Old One, Audio and Electronic Print

Annie's Navajo world was good. A world of rippling sand, of high copper red bluffs, of the low mesa near her own snug hogan. Each morning the gate to the night pen was opened wide and Annie and her father herded the sheep out to pasture in the desert. Annie helped her father watch the sheep. She cleaned and combed the wool that her mother spun into yarn for the loom, and spent many hours sitting, watching her mother weave her rugs to sell at the trading post. But best of all were the evenings when she sat at her grandmother's side and listened to stories of times long gone. Sometimes it seemed to Annie that her grandmother was her age, a girl who had seen no more than nine or ten harvestings. When they prepared the fried bread for the evening meal, if it burned a bit black they laughed together and said it was good. But there were other times when her grandmother sat small and still, and Annie knew that she was very old. It was at such a time that the old one called her family together. Annie and her mother and father sat quietly, respectfully waiting for her to speak.

Grandmother:
My children, when the new rug is taken form the loom, I will go to Mother Earth.

Annie shivered but didn't make a sound. She knew what her grandmother meant. When her mother finished weaving the rug, her grandmother would be gone.

Grandmother:
I would like now to pass on something of mine to each of you. What will you have, my granddaughter? My granddaughter shall have my weaving stick. It is time for you to learn how to use it, my little one.

Mother:
Are you ready to weave, my daughter? Then you may go if you wish.

Annie:
How can my Grandma know she will go to mother earth when the rug is taken from the loom?

Mother:
Many of the old ones know.

Annie:
How do they know?

Mother:
Your grandmother is one of those who live in harmony with all nature, with the earth, the sun, the birds in the sky. They know more than many will ever learn. Those old ones know.

Annie:
Then why do you weave?

Mother:
I weave so we can sell the rug to buy the things we need from the trading post, deerhide for boots, silver for fodder.

Annie:
But you know what Grandma says.

Mother:
We will speak of other things. Now go.

In the days that followed, the old one went about her work much as she had always done, and Annie never left her side. They helped her father shear the sheep and gather the wool. Annie's mother continued her weaving. And all the while, Annie grew more and more worried. Her grandmother would go back to the earth when the rug was taken from the loom. The rug must not be finished, she thought. Her mother must not weave. When the school bus came, Annie did not want to go. But then suddenly she changed her mind. She knew what she must do. As she hopped on the school bus she sat down alone and made her plan. In school she would be bad, so bad that her teacher would send for her mother. And if her mother came to school to talk to the teacher, that would be one day when her mother would not weave. One day.

Teacher:
Everybody form your line. Come on. Come on. Everyone together. OK, who will lead exercises today? Very well then, I'll be the leader. First we'll start with some jogging. OK, follow me. I know somebody must have seen my shoe. The other shoe please. Look, I know it's funny but now I need my shoe.

Custodian:
Are you looking for this?

Teacher:
Thank you. Where did you find . . .

Custodian:
I saw someone playing trick.

Teacher:
Annie?

Annie:
Do you want my mother to come to school tomorrow?

Teacher:
No Annie, it's all right. I have the shoe. Come on into class.

That night Annie curled up in her blanket. She slept lightly, and awakened before dawn. She had another plan.

Annie:
Go. Go. Now they have to look for you all day.

If the sheep were lost, Annie thought, then Mother and Father would have to hunt for them all day. Mother will have no time to weave.

Grandmother:
The sheep are gone! The sheep are gone!

Mother:
Oh, the sheep! The sheep!

Grandmother:
I see them. They're grazing near the mesa.

Annie went with her father to herd the sheep back to the pen. Her mother stayed behind to carry on with her weaving. When night came, Annie could not sleep. She could hear the wind outside whistling through the strings of the loom.

Grandmother:
My little one, you should be in bed.

Annie wanted to throw her arms around her grandmother and tell her why she had been bad. But she was too ashamed.

Grandmother:
Come with me little one.

Together they walked out into the desert. Annie fitted her steps to the slow steps of the old one. When they reached the top of a small hill, they watched the sun rise over the desert. Annie waited for her grandmother to speak.

Grandmother:

My granddaughter, you have tried to hold back time. This cannot be done. The day cannot last forever. The sun comes up in the morning and returns back to the earth in the evening. Earth, from which all good things come for the creatures living on it. Earth, to which all creatures finally go. We are all part of the earth, you, your mother, your father. You will always be part of the earth and the things on it, just as I will always be.

Annie:

Always and forever?

Grandmother:

Always and forever.

Annie:

Mother, I'm ready to weave now.

Annie slipped her weaving stick in place, as her mother had done, as her grandmother had done. And then she picked up a strand of wool and started to weave.